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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,825	04/02/2001	Benoit Barriere	ATOCM-207	8093

23599 7590 02/10/2003

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EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 02/10/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/822,825

Applicant(s)

BARRIERE ET AL.

Examiner

Jonathan S. Crepeau

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9, 10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The preamble of the claim 9 is "An electrode for a lithium-ion battery according to claim 4..." whereas claim 4 is directed to "A structure...". Therefore, the preamble of claim 9 is improper. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5 and 13-15 are provisionally rejected under 35 U.S.C. 102(e) as being anticipated by copending Application No. 09/575,368 which has a common assignee with the instant application.

Regarding claims 1 and 13, the '368 application discloses a structure comprising successive layers of a metal, an adhesive, and a fluoropolymer (see page 13, lines 15-18 of '368 specification). Regarding claims 1, 13, and 14, the adhesive layer is derived from a fluoropolymer chemically modified by a partial dehydrofluorination followed by an oxidation step (see page 8, lines 16-21). Regarding claims 2 and 14, the polymer to be modified comprises a -CFX-CHX<sup>1</sup>- monomer unit (see page 8, line 10). Regarding claims 3 and 4, at least one of X and X<sup>1</sup> is fluorine, chlorine, or a perfluoroalkyl group (page 8, lines 13-16). Regarding claim 5, the polymer may also be PVDF (page 10, lines 23-25). Regarding claim 15, the dehydrofluorination is conducted in a basic medium, and the oxidation is carried out with hydrogen peroxide (see page 10, lines 17 and 27).

Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e), if published under 35 U.S.C. 122(b) or patented. This provisional rejection under 35 U.S.C. 102(e) is based upon a presumption of future publication or patenting of the copending application.

This provisional rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

This rejection may not be overcome by the filing of a terminal disclaimer. See *In re Bartfeld*, 925 F.2d 1450, 17 USPQ2d 1885 (Fed. Cir. 1991).

5. Claims 1-5 and 13-15 are rejected under 35 U.S.C. 102(a) as being anticipated by EP 1054023. EP '023, although published in French, is regarded as an equivalent of U.S. application serial no. 09/575,368. Therefore, claims 1-5 and 13-15 are anticipated for the reasons stated in section 4 above.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6-12 are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 09/575,368 in view of Ono et al (U.S. Patent 6,001,507). Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application.

The '368 application is applied to claims 1-5 and 13-15 for the reasons stated above. Further, regarding claims 6, 7, 9, 11, and 12, the application discloses a lithium ion battery comprising a positive electrode comprising a mixed oxide and a negative electrode comprising a carbon material (see page 12, lines 26-31). Regarding claims 8 and 10, the application discloses

that the metal layers may comprise copper or aluminum (see page 22, lines 2 and 28). Regarding claim 6, the application teaches that each electrode is a two-layer structure comprising a metal layer attached to a layer of chemically modified polymer.

The application does not expressly disclose that the electrode comprises a three-layer structure including an outermost unmodified polymer layer, as recited in claim 6.

The patent of Ono et al. is directed to a nonaqueous secondary battery. In column 1, line 52, the reference teaches the use of PTFE or PVDF as electrode binder materials.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated by the disclosure of Ono et al. to use the three-layer structure taught by the application in the electrodes of the application. In column 1, lines 50-55, Ono et al. teach that PVDF and PTFE are employed as binders because of "excellent oxidation resistance." Ono et al. further teach at column 1, line 55 that "when a fluorine polymer, such as PVdF or PTFE, is employed as the binder, the binding force between the depolarizing mix for a cell and the collector however is too weak." The artisan would be motivated by this disclosure to employ the three-layer structure of the '368 application in the electrodes of the '368 application. First, the disclosure indicates that pure (unmodified) PVDF or PTFE are good binding agents, thus providing motivation to use them in the outermost binding layer containing the electrode materials. Second, it indicates that a further adhesive is needed between the binding agent and the collector. This adhesive would correspond to the modified polymer layer of the '368 application. Accordingly, the subject matter of claims 6-12 would be rendered obvious to a skilled artisan.

Art Unit: 1746

8. Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1054023 in view of Ono et al. As stated above, EP '023 is regarded as an equivalent of the '368 application. Therefore, claims 6-12 are obvious over EP '023 in view of Ono et al. for the reasons stated in section 7 above.

### *Double Patenting*

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of copending Application No. 09/575,368, in view of Ono et al. The difference between the instant claims and the '368 application claims is that the instant claims require a three-layer structure (metal, modified polymer, polymer) whereas the '368 application claims recite a two-layer structure (metal, modified polymer). However, the instant claims would be obvious over the '368 application claims when viewed in light of the disclosure of Ono et al. As noted above, Ono et

al. teaches that PVDF and PTFE binders have good oxidation resistance, but also discloses that these materials do not have sufficient adhesiveness to a current collector. Therefore, the disclosure of Ono et al. would motivate the artisan to modify the two-layer structure of the '368 claims by using an outer layer of pure (unmodified) polymer. As taught by Ono et al., the pure polymer has good oxidation resistance. Additionally, the problem posed by Ono regarding the adhesiveness of the binder would be solved by using an intermediate adhesive layer of unmodified polymer to contact the metal collector with the outer polymer layer. Therefore, the instantly claimed subject matter would be rendered obvious.

Regarding the recitations of aluminum and copper in instant claims 8 and 10, Ono et al. discloses these materials in column 7, lines 13-17. Accordingly, these recitations are also rendered obvious to a skilled artisan.

This is a provisional obviousness-type double patenting rejection.

### *Conclusion*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (703) 308-4333. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 305-5408 or (703) 305-5433.

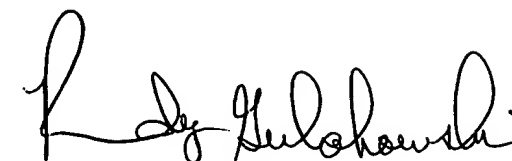


Art Unit: 1746

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

February 5, 2003

A handwritten signature in black ink, appearing to read "Randy Gulakowski". The signature is fluid and cursive, with the first name "Randy" and last name "Gulakowski" clearly distinguishable.

RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700